AMERICAN INTELLIGENCE.

Case of Supposed Poisoning with Arsenic. Reported by Samuel Jackson, M. D. of Northumberland.—There died in this town, during last February, a man named Logan, as I supposed of inflammation of his vein from bleeding. He had cut his fout, by which he lost a large quantity of blood, and when this had healed, he went abroad on an intensely cold day and came home drunk. The next day, the 1st of February, he was attacked with inflammatory fever, with pain in his head, back, limbs, and particularly in the leg which he had recently cut. I treated him by bleeding, purging, and all the antiphlogistics; but the house was so open that it was impossible to keep it warm, and the poor man was sometimes so destitute of wood that I was obliged to send him some from my own house. Hence he often complained of having taken a fresh cold, and he imputed to the openness of a window near which he lay, a slight cynanche tonsillaris and cough, which came on about the fifth day. The sixth and seventh days the fever appeared to yield, but on the following morning his wife came for me at an early hour, with information that he was worse.

His fever had increased, and when I took his arm for the purpose of venesection, he said that it hurt him. I found that one of the former orifices was open, swelled, pouring out a bloody, serous fluid, and that a red streak proceeded from it three inches up the arm. The antiphlogistic measures were resumed, he was copiously bled, and a large blister put over the orifice. But the inflammation steadily increased with a hard, wiry, jumping pulse, and I particularly remember that his skin was very dry and hot. The next morning, twenty-four hours before he died, the pulse was unsubdued, the patient very weak, the skin still dry and hot; he was slightly delirious, unless when his attention was excited; there were some fits of anhelation, but no pain in the breast; the arm was very painful on the least motion. I now perceived the idea of great danger, but a dubious remedy being better than none, he was bled again. The blister, to which I had trusted so much, rose well, but without benefit. He had taken small doses of tart. emet. the sixth of a grain every hour, during much of his sickness, and as his stomach bore them well, they were continued through this day till midnight.

At this hour I visited him for the last time, and found him with dry, hot skin; pulse corded and strong, probably the strength of weakness; slight delirium; anhelation; complaining of nothing but his arm. He was now bled as a last and hopeless resort, but he became faint with the loss of six ounces, though lying on his back. I stayed till the pulse rose again into hardness and strength, but did not dare to detract more blood. A large blister was now applied higher up than the former. All medicine was discontinued, his drink was green tea and cold water; his food panada, of which he was desired to take frequent and small portions.

I now considered that his arterial system was in such irritation as not to be subdued by any means that could be used in his present weakness, and that he must necessarily die of the inflamed vein. During the remaining six hours of his life, he complained of nothing but his arm and the blister. With this, indeed, he became so outrageous as to make violent efforts to tear it off. He slept none, was slightly delirious, and frequently insisted on leaving his bed. Near six o'clock he said he was better, but upon making an effort to raise from bed, he fainted and died in a few minutes.

The above recollections of the case, I recorded after an interval of eight days

from his death, when it began to appear that an inquisition was to be instituted. Many particulars may have escaped me, but the outline as above recorded is correct and true.

Dr. Rodrigue and myself went prepared to make a thorough examination of the body, but as the widow refused to leave the house, and as there was no other room, we contented ourselves with merely dissecting out the inflamed vein. This the doctor did in great haste, while I was comforting the woman in a fit of hysterics, and therefore he did not explore the utmost extent of the inflammation. He brought away about eight inches, and upon opening it, we found through its whole extent, the most perfect specimen of intense inflammation we had ever seen. There was no pus nor any thing similar. We agreed in opinion that if this had not been the sole cause of his death, it had at least hurried on the fatal event.

The whole course of this man's sickness was, as I thought and still think, perfectly natural till the inflammation of the vein took place. I had several similar cases during that month, and I remarked to his mother at the time, the wonderful similarity between his case and that of his brother. I did conceive that poison could have no part in the matter, for during the whole course of his disease there was no puking, no purging which was not the effect of medicine, no pain nor sensation of heat in the stomach or bowels, no nausea which was not apparently the effect of febrifuge doses of tart. emet. no spitting nor hiccough, no cold sweats, the teeth were never on edge that I heard of, no inordinate thirst, no cramps, numbness, or paralysis of the extremities, stools not unnatural, countenance not changed, the blood was not dissolved after death, the lungs were said to be sound. He complained during the last three days of nothing but his arm, and the fever thereby excited; his pulse was strong, far beyond his general strength, which is truly characteristic of some direct irritation of the heart, but not found in lesions of the stomach. It was remarked by the inquest that the body and countenance were perfectly natural.

We are not unaware that patients have been known to die of arsenic without pain, but this always happened when such large doses had been taken as to destroy life without reaction, and therefore the principal symptom was frequent syncope. In these cases there was no inflammation. If arsenic had been the cause of this man's death, it is most clear that it must have been the cause also of that inflammation and erosion which was afterwards supposed to be seen in the stomach, and how he could take a sufficiency of the poison to inflame and erode the stomach, without exciting some corresponding symptom, is utterly incomprenensible and without a parallel. Even when Fow. solut. is given a little too freely, it is followed by vomitings, bloody dysenteric stools, and paralysis of the extremities; but nothing suspicious was discovered in Logan's case, though I visited him two or three times every day, and four times the day and night before he died. To reconcile the phenomena of the disease with the known effects of arsenic, we conceived to be impossible. This has been our unvaried opinion from the very first, others think differently—let every competent reader judge for himself.

A few days after Logan was interred, it was discovered that his wife had procured arsenic from an apothecary, and hence some suspicions arose that he had been poisoned. Many little circumstances, altogether trivial and irrelative to the business, had they been properly understood, were soon ascertained and put into the public mouth; the woman's virtue began to be suspected, and it was reported that she had been intimate with a neighbouring gentleman. It seldom happens that reason is listened to amidst popular clamour, hence the coroner with his inquest took various depositions with respect to the man's sickness and death.

My evidence, a copy of which now lies on my table, was in perfect accordance with the above statement of facts.

Sarah Martin, a respectable woman, deposed that a daughter of the deceased "stopped at her house, and said her mother had sent her to Goheen's for

ratsbane, and they would not give her any at Goheen's, but she got it at Hobart's; she said that her mother wanted to give it to the rats and mice, for they eat all her butter. The child was about seven or eight years old. The outside paper was white. This was on Thursday or Friday before his death," the 5th or 6th of February.

George Lothy, Hobart's shopkeeper, testified that the woman had obtained ʒij. arsenious acid from him, on the 30th January, and that a little girl, about eight years old, he knew not whom, nor could he describe her, had bought some from him about three days before.

Davis Goheen testified that a girl, about eight years old, entirely unknown to him, and whom he could not describe, procured two cents worth of this poison, about two or three weeks before this time, the 21st of February.

It was at once determined by common consent, that the child was the same in both cases, and that it could be no other than Logan's daughter; and though the girl resided at this time less than four miles from town, and might have been identified by either of these apothecaries, had they seen her so recently, yet no effort was made by the inquest to produce her in proof or disproof of this hasty but important assumption. Some other persons were sworn, but their testimony was altogether trifling or irrelevant, and when properly understood went rather to clear than to convict the woman. One witness testified that the salts which Logan took contained shining particles, and when I sent for my jar of sal. glaub. *out of which these were obtained,* to show them to the witness, and explain to the inquest the appearance of this medicine when half effloreseed, they obstinately refused to look at them. The body was then disinterred, and committed to three medical men, sworn to ascertain if possible the cause of the man's death; and after two whole days spent in this part of the business only, they made in writing the following ominous report, in consequence of which the woman was committed to prison.

"We, the board of physicians appointed to enquire into the cause of the death of William Logan, respectfully beg leave to report, that after a patient examination of the stomach of the deceased, as also its contents, we are of opinion that he died in consequence of poison from arsenic, the same being evidenced both by the appearance of the stomach and a variety of chemical examinations to which its contents were subjected—all clearly indicating the presence of that poison.

W. N. ROBINS.
D. GILBERT.
JOHN B. PRICE.
ISAAC HOTTENSTEIN."

This last gentleman, and one other, who refused to attend, were added to the commission at the desire of the inquest, after the first day's examination.

The circumstances favourable to the accused were as follows:—Her husband had been heard by his sister, a woman of unquestionable character, to complain that the rats were so troublesome that he could not rest at night; (this she swore before Ch. Heck, J. P.) and Andrew Carothers testified before the grand jury, that he had heard the accused tell her husband the rats would eat all their potatoes. She always told a consistent and probable story concerning the arsenic procured by herself. She said that her husband had determined to poison the rats, and was therefore about to send his little daughter to the apothecary for arsenic; that she had a great dread of this article, and after some disputation with him about the safety of using it, she promised to procure it herself, rather than let her child go on this dangerous errand; that when she brought it home her husband was about to mix it with flour, and that in her dread for the safety of her family, she threw it into the fire; that if any portion had been procured by her daughter, it was by her husband's directions, which might have happened as she herself had been frequently absent about that time among her neighbours, where she worked hard for means to support her family. The child declared that her father sent her to Hobart's for poison when her mother was

absent; that when he received it, he was drunk and spilled it on the hearth. The testimony of Sarah Martin, that the child said she had been to Goheen's where they refused her the poison, but that she obtained it at Hobart's, was nullified by Goheen himself, who swore before Ch. Heck, that no one had been denied arsenic at his shop; and it was again disproved by the fact, that neither Hobart nor his boy had sold arsenic on either of those days, the 5th and 6th of February, nor indeed since the 30th of January. But the testimony of Sarah Martin can be thus explained: on the very days and the very hour of the days on which she deposed that Logan's daughter called at her house with the paper of poison, the child came to my shop for sac. sat. which was wrapped as Mrs. Martin said the arsenic was, in the same whitish paper and making about the same bulk. Now, when I questioned the woman before she was arrested, she said that her daughter having opened the paper of sac. sat. which she obtained on Thursday and spilled some, she told the child that this was poison she was going for, and that she must not open it; the daughter asked—is it the same poison that Papa sent me to Hobart's for? Yes—without thinking or enquiring further about the matter, till she found herself brought into suspicion. The honesty and simplicity of this story must be apparent to every one. I particularly remembered having expressed my surprise on Friday morning that all the lead had been used, and that the mother told me Mary had spilled it, upon which I directed her to send for more.

A circumstance of no little importance was, that she appeared to have no motive whatever, for so hideous a crime. She had never lived on bad terms with her husband, and there was no hope the most distant of her being bettered by his death. She was of a compassionate, benevolent temper; had attended him faithfully during his sickness; had come to me personally several times when he appeared to be worse; had come once in the night, as he said himself, contrary to his express design; had several times requested respectable neighbours to visit him, thus showing no signs of mystery. When I requested permission to open the body she granted it in the presence of a good witness, without the least hesitation. She showed no signs of fear in facing any person on the subject, and so loosely was she guarded by the kindness of the Sheriff, that she might have made her escape at almost any time; by night or day with the utmost facility.

From the whole business of the examination, I was most carefully excluded, though I had been the man's only physician. Some of the most respectable inhabitants went forward and desired that I might be present, as I was the oldest physician and supposed to be more versed in post mortem examinations; several of the jury made the same request, and particularly the foreman, but in vain.

The following is a copy verbatim of the minutes of their proceedings, as taken by Dr. R., their chairman, and very politely put into my hands.

"So soon as the stomach was exposed, ligatures were cast around the cardiac and pylorie orifices, so as to prevent the escape of its contents. It being removed, a longitudinal section was made through its anterior part—the contents were then put into a clean earthen dish.

"The general appearance of the stomach presented that of inflammation, but more so in the posterior part, (considering the subject in an erect position,) commencing about midway between its cardiac and pylorie extremities, and spreading towards the latter—the villous lining of which was discoloured and eroded, presenting an inky appearance, apparently the effect of some corrosive substance, (though frequently the effect of some other cause than arsenic.) The dissection of the vein was continued to the shoulder, the inflammation did not appear to extend more than an inch, &c. (*Something wanting here.*)

Before we proceed further with this report we shall stop to discuss the state of the stomach, since it is necessary to put into competition some conflicting opinions.

Dr. G. one of the examiners testified thus on oath before Israel Pleasants, J. P.

"The stomach generally upon its internal surface, presented an inflamed appearance. The inner coat of the posterior part, in an erect position, being between the curvatures, and nearly equidistant between the two extremities, approaching nearest the cardiac orifice, was discoloured and corroded to the extent of from eight to ten square inches. The discolouration was bluish-black or rather inky. The erosion was such as to destroy the texture of the inner coat which was easily removed. The parts of the stomach adjacent to the discoloured part, or rather the whole floor of the stomach when in a supine position, was more inflamed than any other parts."

Dr. Hottenstein, another examiner, sworn at the same time in these words: "I found on the interior surface of the stomach a large dark spot about two and a half inches diameter. Some small dark spots between a gray and a black, were scattered over the internal surface of the stomach, some as large as a pin's head; but not elevated. On the outside of the stomach over the large dark spot there was considerable marks of inflammation. The blood-vessels had been considerably enlarged, as I thought, compared with those of a sound stomach, and of a red colour or pink. The villous coat on the large dark spot had been considerably eroded and softened, but not eaten through—I did not see any ulceration. The stomach had a pale appearance except near the pylorus where it was yellowish. I don't recollect any other marks of disease. I never saw a stomach ulcerated or inflamed. An attempt was made to obtain the garlicky odour from either the precipitates or the dried contents of the stomach, but we did not distinctly perceive it. No experiments were made on the precipitates that I know of—I think they were thrown into the fire."

Wm. A. Lloyd testified on oath at the same time, that he saw the stomach within two hours from the time it was taken from the body, that he had seen several other human stomachs both inside and outside, that Logan's appeared to be good and sound excepting the coloured part, that he particularly examined this coloured part, which was of a lead or a French gray about as large as the palm of his hand, that the outer coat was perfectly sound and not coloured, that he held it up and saw no redness but the veins, that the intestines looked white on the outside, he did not see them opened. Also that Logan was an intemperate drinker for the fourteen years that he had known him and employed him occasionally, that he would sometimes drink half a gallon a day, and would become drunk before dinner."

Here then are some direct contradictions, which can be explained only by supposing that every one had a right to make up his own opinion, in a matter not perfectly understood. As to an *erosion* by arsenic, this is not consistent with true pathology, since it has been demonstrated that the poison does not act chemically on the living solids; and as to the supposed inflammation, it appears to be a mere matter of opinion whether any existed. Dr. H. saw none except in the outer coat over the dark spot; but as none of the others observed this, it is more than probable that the "appearance of inflammation" was owing to the arteries being rendered more apparent by the accidental tenuity of the inner coat. The Doctor saw no inflammation in any other part of the stomach; Mr. Lloyd saw none, even here, and no man was likely at that time to scrutinize the subject with greater severity.

If we are not greatly mistaken, the experienced pathologist will find this to have been a genuine case of *ramollissement*, confined most probably to the villous coat; and as this lesion is now presumed to be the effect of phlogosis, either acute or chronic, we have only to refer to the habitual intemperance of the man for an entirely satisfactory explanation of the whole phenomenon. He was at least forty years old, and has been very intemperate in the use of our country whiskey for many years, an article which as it is here made, must often contain some verdigris. That the continued use of this poison should excite chronic inflammation of the stomach is not to be called in question; and in fact some weeks before his death he was heard by Andrew Carothers to complain of this part, and to say that he should not live much longer. All parts of

the stomach except the dark spot were probably healthy, and a chronic inflammation of so small a portion might not afford any severe symptom. This explanation appears more reasonable than to suppose an acute inflammation by arsenic, without puking or any mode of distress. Witness the following description of *ramollissement* condensed from M. Louis.

"The stomachs presented nothing particular externally. Internally there were sometimes patches of a pale white, *but much more frequently of a blue colour. The mucous membrane in the points corresponding with these appearances, was very thin and soft, transformed, as it were into a glairy mucus.* These spots were sometimes rounded and continuous—sometimes disposed in long and narrow bands. A slight examination would have led to the idea that, in these places, the mucous coat was entirely destroyed, and frequently there was actual destruction but to a very small extent of the membrane. Various degrees of this lesion from slight extenuation to entire destruction of the mucous coat were sometimes observed in the same stomach—exhibiting the process of spontaneous perforation." *Med. Chir. Review for Jan.* 1825, *p.* 174. Since pathologists have attended more to the lesions of the digestive organs, they have found it infinitely more difficult to account for them than for disorganizations in any other part of the body. Even the most *expert* have mistaken vascularity and congestion for inflammation, and a coagulum of blood for an ulcer in the stomach from arsenic. To our present purpose, Dr. Shaw, *Anatomy, p.* 51, has the following remarkable passage.

"From the variety of appearances of inflammation, from the *black spots*, and from the ulceration and corrosion which, in the course of my dissections, I have seen in the stomachs of those who have died without any marked symptoms of affections of that viscus; and from the close resemblance which many of these have had to the stomachs of those persons who have swallowed poison, and from the similarity of appearance produced by gastritis and other diseases to those caused by poison, I have come to the conviction, that the appearance of the stomach or intestines alone, in a question of poison, is not to be depended on. In the last book which has been written on poisons, that of Orfila, the list of appearances which is given, as to be expected where poison has been taken, corresponds exactly with those which I have found in stomachs, where I was certain no delcterious matter had been taken. I am happy to think that this degree of uncertainty will prevent the anatomist from being called on to decide a question which may involve the life of a fellow creature."

Such is the opinion of this expert pathologist—such too, as far as our reading goes, is the opinion of all those who are truly learned and taught in the school of experience; but as our examiners are not unwilling to confess that they had no knowledge of morbid anatomy, they may be readily excused for a hasty assumption from such imposing appearances as they have described. Indeed so striking to them was the sudden apparition of a black spot in the stomach that, as Mr. Lloyd testified, they seemed convinced of the fact of poisoning, before any chemical experiment could have been made.

It is much to be lamented that the bowels were not opened, for if the stomach had really been inflamed by arsenic, these would no doubt have presented corresponding lesions. Dr. Male has frequently found the rectum more inflamed and abraded than the stomach itself, and Dr. Baillie, found it mortified in several cases. Mr. Brodie observes, that the lesions are greatest in the stomach and rectum. Wm. A. Lloyd testified, that on the outside, (that is of course, as far as he could see them,) the intestines appeared healthy. From all the testimony and *from the symptoms of his disease*, mark this part of the history, it may be fairly inferred that inflammation, sufficient to account for his death, did not exist in the stomach. There was no ulcer, no permanent redness, no coagulating lymph, no thickening of the coats, no extravasated blood; but one thing there was, a black spot with the villous coat as it were eroded with arsenic—an operation that cannot take place in the living stomach, however imposing it may appear to the minds of the unphysiological.

The following is the conclusion of Dr. R's. minutes, from which we have inferred that the chemical experiments were as fallacious as the appearance of the stomach.

"The contents of the stomach, about ℥xvi. and principally fluid, were thoroughly mixed by agitation and stirring, and then successive portions submitted to the following tests. A small portion was put into a clean Florence flask to which about four ounces of *common* water and a few grains of sub-carbonate of potash were added; this was submitted to the heat of a spirit lamp until boiling *commenced.* Portions of it were poured into two clean wine-glasses, to one of which a small quantity of sulphas cupri was added; this had the effect of changing the fluid, which had been of a light *hazel,* (owing to the colour of the contents of the stomach,) to a light green colour resembling that of Scheele.

"The surface of the other glass a stick of lunar caustic was applied to; the effect was an immediate *white cloudy* appearance, which soon changed into a reddish-yellow or *orange* colour, and after standing a few hours, resolved itself into a reddish-brown.

"This test was varied in the following manner. Some of the fluid prepared as above was applied to the surface of clean white paper, over which a stick of lunar caustic was drawn; the immediate effect was a line of a pale yellow colour, which, when minutely examined, presented a flocculent and uneven surface.

"The above tests being with (common) water, we subsequently employed snow-water with the same results, save that of copper which appeared of a better green.

"The lines subsequently drawn with nitras argenti were moistened with liquid amm. and the result was a deeper colour than when the ammon. was not used.

"In order to be more certain, and to compare the results of the suspected matter with that of arsen. acid, we treated the latter in the same manner as the contents of the stomach, and the effects were similar.

"The next day, the remaining contents of the stomach having been dried, half an ounce of the suspected matter was boiled with snow-water in a flask until it rose to the top of the vessel; the fluid was suffered to cool, when a stream of sulphuretted hydrogen gas was passed through it, this immediately changed the solution to a beautiful light golden-coloured liquid; after which a solution of arsenious acid was submitted to the same, and the result was precisely similar, and the gradual precipitation of a yellow matter was synchronous in each. The tests were several times repeated, and their results uniformly similar.

"We placed a small quantity of the matter suspected with black flux, between two plates of copper, and submitted them to a red heat; after suffering them to cool, a silvery white stain was very perceptible, precisely similar to that produced subsequently with the pure arsenious acid. This was repeated with similar results."

To this report we must add, that they tried to obtain the alliaceous odour as testified by Dr. H. but failed. They attempted then to metallize the supposed arsenic, but failed here also. This however, was considered as no disproof of their previous experiments, and therefore one accounted for the absence of metal by the presence of moisture, a second by their having too little heat, and a third by their using too much—all which circumstances were surely within the power of the chemist to obviate.

As to this first experiment, that is with sulp. cupri, it is not for us to decide whether it is a safe test for arsenic. Christison, probably the first authority, says decidedly that it is not, and others have adopted the same opinion. That it will detect very minute portions of arsenic is certain; but it is equally certain that it will detect and strike a green colour with other matters which are sometimes found in the stomach, and particularly if the fluid operated on should be tinctured with yellow. Now Dr. H. testified before Esq. Pleasants, that the fluid essayed with this test was the colour of brandy and water—Dr. R. in his minutes calls it a hazel—to compare colours is extremely difficult. We are not

predicating any objection to this test upon the possible presence of onion sauce, having satisfied ourselves, that Dr. Paris's observation is correct—that the precipitate formed by onion juice, potash, and sulph. of copper, appears greco, only because it is viewed through a yellow medium, produced by mixing potash with the vegetable juice. But, hold! the history of this objection, from its author, Dr. Neale, to this time, shows how even experienced eyes may be deceived when experimenting on the coloured contents of the stomach. This consideration, too, does not more impair the value of this test, than it does that of all others which depend merely on striking a colour and are not *pursued with consecutive agents*. Had the precipitate been an arsenite of copper, they might have rendered this probable by testing it with the nit. argenti, and the yellow fluid thus formed they might have essayed with various acids; or they could have dried the precipitate and attempted the tombac alloy, or have burned it on charcoal for the alliaceous odour. A portion of their green they might have tested with ferro-prussiate of potash, or with sulphuretted hyd. water, which they had at hand; or they might have dried the whole and retained it for the collective metallization. In fact, if the supposed green was utterly fallacious, viewed as it was through a yellow or hazel medium; it could not have remained so had they transformed it upon white paper, as directed by Dr. Paris, or had they merely applied to it a stick of lunar caustic. When Mr. J. Kerr obtained a green precipitate from the juice of onions, phosphate of soda, and sulph. of copper—one which, *mirabile dictu*, could not be distinguished from Scheele's green, by either himself or three medical friends, he showed them that it would not form the tombac alloy.* And when Dr. Paris was supposed by a number of gentlemen to have struck Scheele's green in a supposed case of poisoning, he transferred the deceptious precipitate on white paper and showed them that it was plainly sky-blue.†

Since writing the above, however, we have proven that a mere yellowishness of the fluid, at least as it was made by brandy, coffee, tea, both green and black, or by gamboge, does not render the precipitate of carbonate of copper apparently green, neither does the real yellow, produced by a cold infusion of onions and potash. When we made our former experiments, it was, as we believe, with a *decoction* of onions and phosphate of soda. This shows that mere yellowness of the medium has no such effect as Dr. Paris supposed; there must therefore have been some latent principles that eluded his chemistry, and these it is that render the liquid tests fallacious. One of these, however, the learned Dr. has mentioned—"The presence of peroxyde in the cupreous salt will also impart a green colour to the precipitate produced by an alkali." *Pharmacologia, article Arsenic.* All is darkness and disputation as it regards this agent, the sulphate of copper, and further investigation is wanting.

As to the experiment with lunar caustic, there is here an aberration that we are able to explain. The report states that there was "*a white cloudy* appearance, which soon changed into a reddish yellow or *orange*, and after standing a few hours, resolved itself into a *reddish brown*." We procured water from the pump belonging to the house where the experiments were conducted, and having dissolved in it a very little carb. pot. and applied the silver test, the "white cloudy appearance" was made, which subsequently went through the very changes that Dr. R. mentions; that is, it soon changed to "a reddish-yellow or orange colour, and after standing a few hours, (perhaps two,) it changed into a reddish-brown," which was permanent. Here then was no arsenic. But upon adding Fowler's solution or the arsenite of potash to some of the *same water*, the real arsenite of silver was thrown down, which continued yellow in the light for at least six hours. It may be replied that the above test was tried with the fluid spread on white paper and that the colour struck was a pale yellow with a flocculent surface. It must be remembered that this was done with the same fluid as the above, and why it should afford a yellow precipitate on paper

* Eclect. Rep. VIII. p. 139. † Paris and Fonblanque, Vol. II. p. 242, note a.

and a white in the glass is utterly incomprehensible. As to the flocculent surface upon which Dr. Paris depended so much for a clear distinction between the effects of arsenic and of an alkaline phosphate, this is somehow an incomprehensible mistake; we have frequently tried them side by side on white paper, and found them equally yellow and equally flocculent. The different changes of colour which they afterwards undergo is of more importance.

But what utterly condemns this experiment with the lunar caustic, is the fact, that it was repeated with snow-water and with the same results; that is, with "an immediate white cloudy appearance, which soon changed into a reddish yellow or orange, and after standing a few hours resolved itself into a reddish brown."

It is to be lamented that the copper and silver tests were used in the most objectionable forms. The ammoniorets are less fallacious, are equally active, and are quickly prepared.

The experiments with sulph. hyd. gas appear to have been imperfectly performed. Nothing is said of their having added an acid, without which it is doubtful whether a precipitate will form, unless the arsenic be present in larger quantity than can be presumed in this case. We have tried the experiment with one grain to the ounce, and no precipitate took place for forty-eight hours, but a few drops of nitric acid then precipitated the whole colour in one night. President Cooper says, that "the test of sulph. hyd. is ambiguous from similarity of colour in other metallic precipitates, and from impurity of the gas." —*Tracts on Med. Jurisp.* 439—and Dr. Bostock says that tart. emet. and some other bodies will produce phenomena which may be mistaken for the effects of arsenic," *Paris and Foublanque, II.* 249. Again he says—the colour and formation of the precipitates are "so similar, that when the comparative experiment was made on the two substances, in contiguous glasses, it was difficult to discover any visible mark of distinction."—*Eclect. Report. I.* 32. So true is this, that there now stands before me a bottle of white oxyde dissolved in water, and one of a similar solution of tart. emet.—their strength not recollected—both rendered yellow by a stream of sul. hyd. gas; there is no precipitate in either, and if there be any shade of difference, it is almost infinitessimal.* Now it is a fact, that Logan took tart. emet. in small doses without puking, for several days; and it is in sworn testimony now before me, that he took it till six hours before his death. It appears then from some of the highest authorities that even this test is fallacious; and I have fully shown that it was particularly so in this case. We are aware that Christison considers it the very best test; but then he goes entirely on the principle of metallization. He considers all the others as fallacious or useless; he looks upon this too, not as a test, but as a mere chemical means of collecting the arsenic for sublimation. This is the purport of his paper in the *Edinb. Med. and Surg. Jour. July*, 1824.

Of all the experiments, that of making the colour on copper plates, appears to be the most imposing; but Dr. Paris considers that "with whatever care this experiment is conducted, it is, *to say the least*, a clumsy and unsatisfactory test, and ought never to be relied on."—*Pharmac. Jrl. Arsenic.* Professor M'Nevin thinks that a shade of colour produced in metallurgy must not be depended on—*Cooper's Tracts, p.* 423,—and Dr. Bostock found that a little charcoal burned between plates of copper, left a mark so similar to that of tombac, as "to differ in degree rather than in kind."—*Ecl. Rep. I. p.* 37. This is a most important discovery, it shows how the unwary may possibly be led into error by the charcoal in the black flux.

It must be confessed that all these experiments, taken collectively, do afford some feeble presumption that arsenic was present, and had the examiners stopt here, as some more careless have done, this presumption might have been worthy of consideration. But they failed in their attempts at sublimation, and

* This hydro-sulphuretted solution of tart. emet. inclines to orange if there be more than one-eighth grain tartar to the ounce of water.

also in attaining the alliaceous odour. Now a question arises whether these failures are not sufficient to nullify all their previous experiments. We presume that most chemists would answer this question in the negative; had these experiments been more correctly and more variously performed, with consistent results; but as matters stood these negatives conspire with other facts to prove that none of the metal existed in the stomach. They leave us destitute of all *positive* proof, and greatly debilitate the *circumstantial;* therefore, since such strong suspicions arose in their minds, it is greatly to be regretted that they did not proceed further with the enquiry.

Some important leading tests were omitted, as lime water, the favourite of the German chemists; chromate of potash, as proposed by the illustrious president of South Carolina College; ioduret of starch, invented by Brugnatelli; the aqua sappbirina; the mineral cameleon. All the consecutive tests which are of the greatest importance, and which may be so variously, so easily, and so satisfactorily employed, were omitted. The stomach was not boiled, the bowels were not opened, nor their contents examined; no search was made for particles of arsenic with a microscope, though a very powerful one was within their reach; the stomach was destroyed, and no drawing was made of it, though some excellent delineators were at hand; the precipitates were thrown away: how many tests failed without notice in the minutes, like the attempt at sublimation, and the garlic odour, we are not yet informed. The tests they used were more liable to fallacy than several others omitted; and of the copper and the silver tests, the most fallacious preparations were employed.

We are not disposed to blame the examiners, they relied on Dr. Paris' Pharmacologia, here then is the reason they were so easily satisfied of the presence of arsenic. This author says that "the silver and copper tests are capable, under proper management, of furnishing striking and infallible indications; and that in most cases they will be equally conclusive, and in some even more satisfactory than the metallic reproduction on which so much stress has been laid." This is an opinion peculiar to himself, and is deeply fraught with error and homicide. He plainly represents, too, that there is no means of proving the reduced metal but that of burning it for the alliaceous odour. This, too, is a groundless error, and we know that it swayed the mind of one of the examiners: for when I urged him not to cease till they obtained the metal, he quoted Dr. Paris to prove that they had no means of identifying it. The most intelligent man on the inquest held the same opinion, derived from the same author; he also quoted the doctor's story of the deceptious appearance of the charcoal crust in the tube.

Let all these people reflect that liquid tests afford, *in the first place*, one degree of evidence only; that is, they strike a few different colours with some principles or compounds, they know not what; but, *secondly*, when they take the precipitates they formed, and extract from them a metal, they show that it was a metal which struck these colours; and finally, *in the third place*, they prove this metal to be arsenic by the proper experiments. This is an irresistible induction; the test, instead of being merely presumptive, is, in the first place, presumptive; in the second, confirmatory; in the third, decisive and convincing. Dr. Paris is so delighted with making these arsenical colours, that, while writing on the subject, he has laid down his pen to "convince himself with how little trouble, and with how much pleasure and profit, such experiments may be conducted." Vol. II. p. 186. If this be not mere childish play, it is at least the extravagance of a man transported with novelties. If such men as this learned and most excellent doctor, can be thus carried away with yellow and green, it surely cannot be expected that his pupils, youthful and ardent, will show steadiness; or that we, to whom these things are new, should not be equally dazzled with the success of our chemistry. Does not every one perceive how much room there is left for the ardent imagination of a man zealous in the pursuit, to play on these colours. *Nimium ne crede colori.* It is a pretty business, no doubt, to strike all these colours in a glass of transparent fluid, in

which we know that arsenic is present; but to search for the poisnn in the turbid and various mixtures of the stomach is a far different thing.

It has been said that liquid tests will indicate the presence of arsenic, when the quantity is too small for metallization. This is no doubt true—they will indicate but afford no positive proof. Pray, then, is the medical jurist to accommodate his principles so far as to swear that arsenic is there, though he cannot find it, and lay the blame of not finding it on his own inability? Shall he be allowed to predicate his failure on there being too much or too little heat or moisture, circumstances entirely in his power to obviate? The physicians, in Kepler's case, accounted for the imperceptibility of the garlic smell by the presence of burning tar; that is, *if* they had not smelled the tar they would have smelled the arsenic.

The physician ought always to hold a consistent philosophical language, which does not permit him to call a green precipitate by the name of arsenic. Let him refer to the maxim of law—*de non apparentibus et non existentibus eadem est ratio*—and beware how he swears to the presence of what he cannot find. Hence the prudence of our examiners cannot be too highly commended—they swore, not to the poison itself, but to the mere indications thereof. The furnace is indeed the crucial experiment which will in some cases confirm, in others annihilate all the rest; and of so much importance does Orfila think it, that he does not allow the utter failure of all other tests to be considered a sufficient negative, but requires that the sublimation should also fail. Vol. I. p. 133.

We are by no means certain that a person may nnt be convicted on the presumption afforded by liquid tests; but they afford mere presumption, and as such only ought they to be brought into court. If those who are learned in law and versed in all the astucious arts of detecting wickedness, find such a concurrence of circumstances—chemical, pathological, mnral, miscellaneous—as may authorize them to convict the accused, the matter stands between them and a higher tribunal. With this species of casuistry the medical jurist has nothing to do. He ought tn state whether he found the metal itself nr the mere indications afforded by liquid tests, and he ought never to vary his language in the slightest degree. If no metal has appeared in the glass, it is a negative argument of great weight; but if all the leading tests have been used, and these followed by consecutive agents, the effect will be to strengthen or weaken, to confirm or nullify all the other circumstantial testimony. Men have been justly or at least truly cnnvicted by presumptive evidence—this is the business of law and not of medicine; we shall therefore conclude with an opinion contrary to that of Dr. Paris, if it is permitted us to oppose so great an authority, that the copper and silver tests do *not* afford "infallible indications," and that it is grossly negligent if not highly criminal to trust to them, when so many others may be so easily and so satisfactorily employed. Had Dr. Neale with his onion juice, and Dr. Edwards with his supposed arsenic frnm Mrs. D.'s stomach, both resorted to consecutive agents, the cause would have ended with satisfaction to the public, and the troublesome discussions of the subject, ever since that time, would have been thereby prevented. And here let us observe by the way, that in all Dr. Paris' chapter on arsenic in his Pharmacologia, there is not one consecutive test mentioned. Our worthy examiners were therefore left like mariners in an ocean to them unknown, the rocks and shoals of which were left unnoted in their only chart.

Let it not be supposed that we blame the examiners—they did the best they could with zeal and alacrity—no one is capable of doing more. We are merely pointing out those omissions which we should most probably have made ourselves. Among these we neglected to mention the propriety of sending the stomach with a portion of its contents to Philadelphia, to be examined by such chemists and such pathologists as are not to be expected on this side the mountains. This is practised in Europe, and it ought not to be despised by the *savans* of our American villages. If there is murder it ought to be unveiled; if on the

contrary innocence is accused, the honour of families impugned, the peace of children and their posterity about to be destroyed through many generations—surely no pains ought to be spared to prevent the cruel catastrophe, with the consequent endless and wide-spreading imputation of unmerited infamy. The identifying of arsenical colours, as struck by liquid tests in coloured fluids, has deceived some experienced chemists, and it is not to be expected that the laborious village practitioner can have such knowledge of chemistry as may enable him to pronounce on this tremendous business of life and death—a business which the most experienced ought to approach with fear and trembling, with terror and dismay. If the most expert have heretofore blundered and contradicted each other, what is to be expected of us who know nothing of this matter, but what we glean, pro tempore from books of blunders, for the use of the case in hand?

Let it be observed that we have brought forward only a few of the many arguments that lie against a sole reliance upon liquid tests; and as the necessary limits of this paper have excluded some of primary importance, we intend to produce them at some future time.

The reader will be glad to learn that this woman was acquitted. Though no testimony was heard in her favour, and all the physicians swore they believed the man died of arsenic, she was promptly acquitted by the *grand jury*, twenty-three to one. No part of the evidence was committed to writing.

The above case will afford some matter of argument both for and against the supposition of poisoning, and therefore it is calculated to be variously useful. Those morose diabolical spirits who are glad to prove their neighbours yet worse than themselves, will most probably find murder in the case; but the philosophical mind, seeking only for truth, and delighting—not in the vice but in the virtue of others, will hesitate long in this painful sentence. After the most patient and candid investigation, with a full knowledge of all the circumstances, we are decidedly of opinion that the woman was incapable of this hideous crime; that she had no motive to perpetrate it; that all the evidence of poisoning is a mere shadow; that the collective circumstances on the other side of the question, are altogether irresistible. Arsenic was purchased, the man died, there were some presumptive proofs of poison in the stomach—these are mere scattered links in the chain of evidence.

This publication, it is hoped, will have its use by exciting the reflections of those who are better qualified than the author; with these humble views, therefore, and no other, he offers it to the profession "with the spirit of a man that has endeavoured well"—of one whose position and feelings are fortunately such, that he has neither interest to serve nor malice to gratify.

Case of Punctured Wound of the right side of the Chest, penetrating deep into the right Lung, in which the usual symptoms of injury of the lungs were absent, followed by Mania a Potu and Death. By Henry S. Levert M. D. House Surgeon to the Pennsylvania Hospital.—John Johnston, aged about thirty-eight, was admitted into the Pennsylvania Hospital on the 20th of September with a wound of the right side of the chest, produced with a large carving knife. The hæmorrhage was so profuse as to induce us to suppose the subclavian had been wounded; it was suppressed however with lint and compresses until the surgeon arrived. Preparations were now made to secure the subclavian with a ligature. Compression was made above the clavicle, with a key, until pulsation in the radial artery ceased. The lint and compresses were removed, and the coagula turned out: the pressure above the clavicle was relaxed gradually, until the pulsation at the wrist returned, but much to the surprise of all present, no hæmorrhage occurred. It was now thought adviseable by the surgeon, (Dr. Harris,) to postpone the operation of tying the subclavian, until a repetition of the hæmorrhage should render it imperious. Accordingly the wound was drawn together with adhesive strips, and considerable pressure made by the use of compresses and rollers, and a careful attendant placed at the patient's bed side.

9 o'clock P. M. A very slight return of the bleeding, not enough, however to create any alarm. 21*st.* Morning. No more hæmorrhage. The patient remained pretty comfortable until about 3 o'clock P. M. at which time he had a chill —was ordered now gtts. xl. tr. opii. At 5 P. M. the chill had gone off, and I found the patient labouring under mania a potu. Ordered ℞. P. opii gr. iij.; P. camp. gr. v.; q. o. h. with ℥ss. tr. hum. lup. every intermediate hour. This had little or no effect upon him. He died about 11 o'clock the same evening.

Post Mortem—22*nd. Sept.* External wound about three inches long, and very nearly in the same situation as the external incision for taking up the subclavian below the clavicle. The integuments being turned back, we traced the opening through the pectoralis major and minor, into the cavity of the chest. The latter muscle was divided almost entirely, a very few fibres remaining on either side. The knife entered the chest between the second and third ribs, and penetrating the upper lobe of the lung at this point, continued its direction towards the spine, dividing extensively the air-cells and minute blood-vessels. The wound in the lung was between three and four inches long, and between one and two inches in width. The external mammary was divided. The intercostal escaped. There was no injury of the subclavian or axillary artery.

Remarks.—No difficulty of breathing, no cough, no spitting of blood, or any other symptom indicating a wound of the lung existed in this case. The lung on this side, from some previous disease, was strongly adherent to the ribs, which precluded the possibility of an internal hæmorrhage, and consequently of any compression of the lung from this cause. In this manner we may account for the ease with which the patient respired. The brain exhibited no marks of disease.

Case of Severe Lacerated Wound of the Rectum and Bladder. By Charles Hall, M. D. of St. Albans, Vermont.—In the month of May, 1828, I visited Charles B. Weston, of Sheldon, an industrious and respectable farmer, between fifty and sixty years of age. He had just received a most severe laceration of the rectum and bladder, occasioned by being brought to the ground, with some degree of force, partially suspended by a slim straddle, which he had climbed, and by his weight, had bent over, while attempting to destroy a nest of young crows, situated on a large tree standing near by. In this predicament he came to the earth, holding by his hands, to the top of the small tree, his posteriors coming upon a dry beach bush, the body of which, the size of a large walking staff, being broken by the fall, passed, per anum, about ten inches into his abdomen, when his feet touching the ground, prevented its further progress. From this unpleasant position he with some difficulty extricated himself; and on withdrawing the stub, his bladder emptied itself through the opening. He was brought to his house, where a few hours afterwards I saw him in company with Dr. Judson, his family physician. There was no external laceration, the stick having passed in the natural course about two inches, where it perforated the rectum and pierced obliquely upwards, through the coats of the bladder. We were enabled to trace its course thus far with the finger. We could detect no foreign substance in this extensive wound; though, from the appearance of the broken and uneven end of the stub, we were led to suspect that some pieces of it had been left; this eventually proved, however, not to be the case. The unhappy patient experienced the most excruciating agony, and in regard to a recovery, seemed to be in a hopeless condition. But nature, with the assistance of a few remedial agents, such as blood-letting, &c. performed a cure. For the first three or four days, his urine passed mostly through the wound; to prevent which, as well as to restore its natural course, recourse was had to the catheter. This, with the aid of other auxiliaries, soon restored the natural outlet, and the lacerated integuments gradually closed. I am principally indebted to my friend Dr. Judson for the foregoing history of the case, for I saw the patient but once. The Dr. informs me that the man has recovered his accustomed health and usefulness.

I think there is one practical illustration at least, which may be deduced from this case, that of the practicability of performing with success the operation of lithotomy through the same course. This method I have seen noticed as being preferable to the common mode; besides, it has been remarked, that when the operation has been performed in the usual way, and no stone found, it has generally proved fatal to the patient. The same objection might not hold, should there be no external incision, as would appear from the above case.

—

Case of Ephidrosis Olens. By GEORGE F. LEHMAN, M. D.—J. B. a Portuguese seaman, aged 48 years, was admitted into the Quarantine Hospital, September 8th, 1828, from Wilmington, N. C. He had suffered an attack of remittent fever since the 20th of August.

Several doses of castor oil had been administered previously to his landing, all of which had been ejected in consequence of the irritability of the stomach.

When I saw him he was very much debilitated, pulse weak and small,—tongue and lips rather dry,—no fever,—mind much depressed with an assurance of death.—He recovered in a few days, upon the use of tonics and light nutritious diet.

On the 10th, in the evening, passing my hand over his forehead, which was covered with perspiration, and inadvertently pressing it on my eyes, which pained me at the time, I perceived a strong smell of garlic. I washed my hand and applied it to his breast, and the same smell was more distinct.

I ascertained that during the passage from Wilmington to the Lazaretto ground, he had eaten freely of garlic. Sixty hours however, had elapsed since he had tasted any.

On the morning of the 11th the same scent continued, and as he was costive, I gave him Ol. ricin. ℥ss., which operated four times. He was well washed all over, and clean body and bed clothes substituted for those in use.

On the 12th, 13th, and 14th, the garlicky smell remained strong, particularly in the perspiration of the axilla. It diminished gradually, but had not entirely evaporated on the 19th,—the day of his discharge.

—

Sulphuric Ether in a case of Poisoning with Laudanum. By WILLIAM M. FARNESTOCK, M. D.—August 10th, 1826, we were called to see A. L. who had taken two ounces of laudanum with the intent of terminating his existence. When we arrived we found him sinking very rapidly into a deep comatose state, still he resisted every effort to evacuate the poison. We attempted several times in vain to introduce the stomach pump, and continuing the resistance until he was quite exhausted, we were deterred from administering an emetic fearful of its insufficiency to eject the contents of the stomach, and of adding to the prostration of the system. Under these circumstances we forcibly inserted an iron spoon between the teeth, and poured nearly an half ounce of the sulphuric ether into the bowl of the spoon, which readily found its way to the pharynx, and part, perhaps into the stomach—which produced very violent strangulating sensations, and struggling with its suffocating effects, the stomach and diaphragm were thrown into action, and discharged a large quantity of the laudanum. Still dreading the sedative consequences of that which remained, we determined to repeat the dose, and succeeded in introducing a second portion nearly equal to the first, which had the happy effect of discharging the whole contents. The subsequent treatment was simply the ordinary attentions in these cases.

From the very powerful effect which the pure ether has upon the glottis, lungs, diaphragm, œsophagus and the contiguous parts, we are induced to believe that in such cases it may be resorted to with considerable confidence. The usual vegetable astringents, however, should not be neglected, as they may serve as valuable auxiliaries, and are absolutely necessary in the after treatment.

Datura Stramonium in Retention of Urine. By WILLIAM M. FARNESTOCK, M. D.—The season is now rapidly approaching when persons of advanced age are very liable to retention of urine, from exposure to cold and dampness, occasioning enlargement of the prostate gland, and muscular contraction of the membraneous part of the urethra: and these frequently not only produce much incoovenience to the patient, but often very considerable embarrassment to the surgeon. The great sensibility of the parts, and their peculiar conformation render it very difficult to overcome the obstruction in the diseased state. Much of the obscurity in these cases however, arises from the want of a perfect knowledge of the minute anatomical structure, and an accurate acquaintance with the pathological state of the gland; and particularly the augmentation of the third lobe, which presents the chief difficulty in introducing the catheter: and which, by rashness, in pursuing the plan recommended by Desault, of pushing the catheter forcibly onward into the bladder, is frequently so extensively injured as to become the seat of permanent irritation, form a chronic enlargement, and prove an insurmountable barrier to all further efforts to restore it. Dr. Physick has very ingeniously contrived a bougie-pointed catheter, which can often be insinuated when other instruments cannot be passed; but even this is not practicable at all times.

Baffled in some inveterate cases which had sustained injury by injudicious treatment, we were led to try some relaxing medications to subdue the rigidity of the parts, and have succeeded so fully in a few cases with the stramonium, that we feel anxious to recommend it to the attention of the profession.

In the fall of 1825, we were called to see P. B. ætat. 74, who by exposure to cold and wet had been suffering some days with retention of urine arising from an enlargement of the prostate gland. A variety of applications had been made, as emollients, demulcents, fomentations, ice, &c. &c.; and great irritation had been excited by ineffectual attempts to introduce the catheter. The third lobe of the gland had been partially pierced, and become very tender: the least touch or pressure of the instrument would rupture its engorged vessels, and discharge profuse quantities of blood. The catheter was tried, but was arrested at the prostate gland; and being failed in all our attempts with a variety of instruments, and in different positions, we ordered a large cataplasm of the leaves of the datura stramonium, and continued them three hours, after which we readily passed the catheter and drew off a large quantity of urine, mixed with a dark grumous fluid. The following day we encountered the same difficulty in the introduction of the instrument, but which yielded again in a few hours after the renewal of the stramonium. The catheter was now allowed to remain two days in the passage, but excited so much pain and irritation as to oblige us to remove it before we could subdue the disease, and were again reduced to our former dilemma; by persevering, however, with constant applications of the poultices, the disease was entirely removed and has not since returned.

Other similar cases have come under our observation, in the more advanced season, when the leaves could not be procured, under these circumstances we found a bath made of the seeds succeed admirably well. Cases attended with much pain and tenderness are very much relieved by blood-letting; and particularly by the application of leeches to the perinæum.

Might not the extract of belladonna applied daily in cases of chronic enlargement prove beneficial—or should we not expect an equally energetic operation from the nicotiana tabacum? This might be tried in cases of emergency.

Case of Poison by Stramonium. By R. E. GRIFFITH, M. D.—Charles Lambert, ætat. 3, in consequence of eating a few seeds of this deleterious plant, was affected with the whole train of symptoms, generally attributed to its ingestion. He was not seen until about five hours after he had eaten them; at which time his sensorium was much disordered: there were strong convulsions alternating with great excitement of mind; the pupils of his eyes were so much dilated as

almost to obliterate the iris; pulse rapid and contracted; face and upper part of the body universally covered with a vivid erysipelatous redness, which gradually disappeared after venesection. This state of things continued for about fourteen hours, notwithstanding the activity of the remedial measures adopted. The restoration of his senses was sudden and unexpected. Three days afterwards his body became covered with an eruptinn resembling rubeola, except that it was more prominent; this eruption lasted about twelve hours. Several other children were seized in a similar manner from the same cause, all of whom recovered. We have noticed the above case from the singularity of the eruption, which wholly differed from that described by authors as arising from the ingestion of this poison.

—

Notice of Two Children whose Bodies were united anteriorly, and Lived some time after Birth. By J. Wilson Moore, M. D. (Communicated in a letter to Dr. Hays.)—The following case may afford some interest to the profession, and as such I offer it for thy disposal.

On the 21st of the 5th month, 1829, I was requested by Dr. Thomas Barker, to visit with him, in company with my father, Dr. Robert Moore, a twin monster, which had been born that morning.

On examining the children they appeared to be two perfect females, united together by the lower part of the thorax and by the parietes of the abdomen as far as the umbilicus. They were about the ordinary size of seven months children, and appeared healthy, though feeble; one in particular more so than the other; they took nourishment freely, and the nurse informed us that their ejecta passed simultaneously.

The history received was, that the mother had gone her full time, and that no uncommon circumstance occurred to her that could account for the phenomenon. The accouchement was performed by Dr. Barker, who found a natural presentation, but from the circumstance of the labour being somewhat protracted, and her pains ineffectual, excited suspicion that all was not right, and on a more careful examination, he discovered the head of another child resting on the pubis, which not being able to return, he brought into the neck of the other, and the natural pains quickly effected delivery. There was but one umbilical cord, attached to a single placenta.

The children continued to live for twenty-four hours, during which period but very little change took place in the condition of the most vigorous, though the other seemed gradually to decline until the powers of life became exhausted, and at the same instant both ceased to breathe.

The next day, in presence of Drs. R. Moore, James, Shoemaker, B. H. Coates, H. Klapp, Barker, and one or two others, I made an examination of the thoracic and abdominal contents, by making an incision from the sternum along the linea semilunaris of each child. On raising the integuments it was discovered that a thin membranous partition existed, separating the contents of the two abdomens from each other, and extending from side to side, involving in its folds the umbilical vessels, which divided at the umbilicus, and entered the liver on each side at the fissure. These glands were firmly united so as to present the appearance of one entire viscus, though a line of division existed, along which, however, the union was so firm as not to be overcome with the handle of a knife. There was a gall bladder attached to each viscus.

On opening the thorax the lungs seemed natural, and on exposing the heart, (which was contained in a single pericardium,) it was found of an oblong and flattish appearance, having two aortas and two pulmonary arteries. The auricles and ventricles were small, and their formation not as satisfactorily ascertained as could have been wished.

Figure 1. of plate III. presents a drawing of the children as they were united together; it was made by an artist of this city, and presents a correct view of their connexion.

Figure 2. gives a view of the thoracic and abdominal contents as presented

on dissection. *a.* The two hearts united. *b.* The two livers united. *c.* The omentums drawn up. *d.* The intestines. *e.* The umbilical cord—which contained a double set of vessels.

It is to be regretted that circumstances which are unnecessary to mention, prevented our ascertaining more satisfactorily the condition of the heart.

An Account of the Siamese Twin Brothers united together from their birth. By J. C. Warren, M. D. Professor of Anatomy and Surgery in Harvard Medical College. (With a plate.)

These boys were purchased of their mother, by Captain Coffin and Mr. Hunter, (the owners,) in a village of Siam, where they had subsisted in a state of poverty, from their birth. They were confined within certain limits by order of government, and supported themselves, principally by taking fish.

The boys are supposed to be about eighteen years old. They are of moderate stature; though not as tall as boys of that age in this country. They have the Chinese complexion and physiognomy. The forehead is more elevated and less broad than that of the Chinese, owing to malformation. They much resemble each other; yet not so much, but that on a little observation, various points of dissimilarity may be noticed.

The substance by which they are connected, is a mass two inches long at its upper edge, and about five at the lower. Its breadth from above downwards, may be four inches; and its thickness in a horizontal direction, two inches. Of course it is not a rounded cord, but thicker in the perpendicular than in the horizontal direction.—At its lower edge is perceived a single umbilicus, through which passed a single umbilical cord, to nourish both children in the fœtal state. Placing my hand on this substance, which I will denominate the cord, I was surprised to find it extremely hard. On further examination, this hardness was found to exist at the upper part of the cord only; and to be prolonged into the breast of each boy. Tracing it upwards, I found it to be constituted by a prolongation of the *ensiform cartilage of the sternum.* The breadth of this cartilage is an inch and a half; its thickness may be about the eighth of an inch. The cartilages proceeding from each sternum meet at an angle, and they seem to be connected by ligament so as to form a joint. This joint has a motion upwards and downwards, and also a lateral motion; the latter operating in such a way, that when the boys turn in either direction, the edges of the cartilage are found to open and shut. The lower face of this cartilage is concave; and under it is felt a rounded cord, which may be the remains of the umbilical cord. Besides this there is nothing remarkable felt in the connecting substance. I could distinguish no pulsating vessel.

The whole of this cord is covered by the skin. It is remarkably strong, and has no great sensibility; for they allow themselves to be pulled by a rope fastened to it, without exhibiting uneasiness. On ship board, one of them sometimes climbed on the capstain of the vessel, the other following as well as he could without complaining.

When I first visited the boys, I expected to see them pull on this cord in different directions, as their attention was attracted by different objects. I soon perceived that this did not happen. The slightest impulse of one to move in any direction, is immediately followed by the other; so that they would appear to be influenced by the same wish. This harmony in their movements is not the result of a volition, excited at the same moment. It is a habit formed by necessity. At an early period of life it is probable they sometimes differed. At present this is so rarely the case that the gentlemen who brought them, have noticed only a single instance. Having been accustomed to use the cold bath; one of them wished it when the weather was cool: to which the other objected. They were soon reconciled by the interference of the commander of the ship. They never hold a consultation as to their movements. In truth, I have rarely seen them speak to each other, although they converse constantly with a Siamese lad who is their companion. They always face in one direction; standing nearly side by side, and are not able, without inconvenience, to face in the opposite direction;

Of the foregoing there were Males of 20 years and upwards, 1152; 1026 under 20 years; 845 Females of 20 years and upwards; 922 under 20 years.

There were 443 returns received at the Health Office of persons who died in the Alms-house of the City during the year; and 757 People of Colour are included in the statement of interments.

Deaths in each month of the within period.

	Adults.	Children.	Total.
January	176	137	313
February	138	149	287
March	156	149	305
April	130	145	275
May	178	116	294
June	116	176	292
July	148	267	415
August	218	242	460
September	145	142	287
October	216	149	365
November	203	144	347
December	172	133	305
	1996	1949	3945

Agreeably to returns made and collected from 127 Practitioners of Midwifery, there have been born in the City and Liberties, from the 1st of January, 1827, to the 1st of January, 1828, 3581 Male, and 3452 Female children; making the total number of births, 7033; leaving a difference between the births and interments for the year, of 3088.

By order of the Board of Health,

JOSEPH PRYOR, *Clerk.*

Health Office, Philadelphia, January 1, 1828.

Observations upon the Bill of Mortality for 1827.—In comparing the bill of mortality for 1827, with that of the preceding year, we find the total amount of deaths less by 306, still-born included. The chief diminution appears under the head of fevers; the deaths from which in 1826 were 421, whereas the amount from this source in the present year is only 219. A less number of deaths likewise appears under the heads of Consumption, Bowel complaints, Dropsies, Croup, Inflammations, Measles, and some others. Small-pox is the principal disease which presents an increased mortality; which increase, however, is more than overbalanced by the diminution in the deaths from measles. The mortality of adults, or those of 20 years and upwards, is nearly equal to the amount of deaths under that period.

The greatest mortality was in August, when the number of deaths amounted to 450; the smallest in April, when it was only 275. The other months stand as follows, beginning with the highest: viz. July, October, November, January, December, March, May, June, February, September.

Leaving the still-born out of the estimate, the births exceed the deaths 3374, being as 7200 to 3659.

Statement of Deaths, with the Diseases and Ages, in the City and Liberties of Philadelphia, from the 1st of January, 1828, to the 1st of January, 1829.

DISEASES.	Under 1 year.	From 1 to 2.	From 2 to 5.	From 5 to 10.	From 10 to 15.	From 15 to 20.	From 20 to 30.	From 30 to 40.	From 40 to 50.	From 50 to 60.	From 60 to 70.	From 70 to 80.	From 80 to 90.	From 90 to 100.	From 100 to 110.	From 110 to 120.	TOTALS.
Aphthæa	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	5
Atrophy	16	5	7	1	1	1	0	0	2	1	1	2	1	0	0	0	38
Abscess	1	1	0	0	1	3	2	7	3	2	1	0	1	0	0	0	22
Apoplexy	2	0	0	0	0	2	1	8	13	8	8	3	1	0	0	0	46
Angina pectoris	0	0	0	0	0	1	1	1	1	0	2	1	0	0	0	0	5
Asthma	0	0	0	0	1	0	0	1	0	4	4	1	2	1	0	0	13
Aneurism	0	0	0	0	0	1	0	2	2	1	0	0	0	0	0	0	7
Burns	0	2	7	6	1	0	2	2	0	1	0	0	0	0	0	0	21
Bronchitis	9	6	2	0	0	1	2	0	3	1	1	3	1	0	0	0	27
Consumption	17	10	11	15	9	33	164	133	92	46	31	18	2	0	0	0	581
Convulsions	169	56	49	17	2	0	2	6	4	5	1	3	0	1	0	0	315
Catarrh	32	8	7	1	0	0	2	4	0	0	1	0	0	0	0	0	49
Casualties	3	0	0	0	2	2	0	4	3	3	0	2	0	0	0	0	19
Contusion	0	0	0	0	2	2	0	0	1	1	1	0	0	0	0	0	6
Cholera	180	92	10	2	1	0	0	1	3	1	1	0	0	0	0	0	291
Cancer	0	0	0	1	0	0	1	1	2	3	4	6	0	0	0	0	18
Compression of the Brain	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	2
Caries	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Chorea Sancti Viti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Colic	2	0	0	0	0	0	0	1	2	0	1	0	0	0	0	0	6
Cachexy	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
Coup de soleil	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
Childbed	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
Debility	131	33	26	5	5	1	7	6	9	10	16	30	7	0	0	0	286
Decay	1	0	0	1	0	1	2	2	2	1	2	3	0	1	0	0	16
Dropsy	2	2	3	2	1	3	11	15	22	17	4	10	5	0	0	0	97
of the Breast	1	0	1	0	0	1	11	7	10	7	7	1	0	0	0	0	46
in the Head	45	24	29	10	3	0	2	0	0	0	0	0	0	0	0	0	110
Dysentery	14	6	6	3	2	1	5	2	4	1	3	3	2	0	0	0	50
Diarrhœa	29	17	10	3	2	0	2	4	5	5	6	3	3	0	0	0	89
Drowned	0	0	1	5	0	3	2	9	12	16	4	1	0	0	0	0	53
Drunkenness	0	0	0	0	0	0	2	2	11	12	1	0	0	0	0	0	30
Dyspepsia	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	3
Drinking cold water	0	0	0	0	0	0	0	2	1	2	0	0	0	0	0	0	5
Diabetes	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2
Disease of the Heart	6	0	0	0	0	0	0	5	0	0	5	1	1	0	0	0	20
of the Hip-joint	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
of the Spine	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Epilepsy	1	0	1	0	2	1	1	4	3	1	0	2	0	0	0	0	17
Eruptions	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Erysipelas	1	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	4
Fracture	0	1	0	0	0	0	0	2	2	1	1	1	0	0	0	0	9
Found dead	13	0	0	0	0	0	2	6	5	3	0	0	0	1	0	0	29
Fungus hæmatodes	0	0	0	0	0	1	0	0	0	0	2	1	0	0	0	0	4
Fever	8	6	9	7	6	8	22	21	11	11	7	0	2	0	0	0	118
Bilious	3	4	4	7	5	5	27	20	9	5	9	6	1	0	0	0	105
Typhus	0	0	0	2	4	4	11	10	5	5	4	0	1	0	0	0	46
Intermittent	4	2	2	2	0	0	4	2	2	1	0	0	2	0	0	0	21
Remittent	7	5	6	1	3	5	20	9	5	2	2	1	2	0	0	0	68
Inflammatory	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
Hectic	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	2
Puerperal	0	0	0	0	0	0	5	2	0	0	0	0	0	0	0	0	7
Nervous	0	0	0	1	0	0	6	1	1	2	2	0	0	0	0	0	13
Carried over	705	282	192	96	51	82	343	312	264	150	132	94	36	1	1	0	2741

DISEASES.	Under 1 year.	From 1 to 2.	From 2 to 5.	From 5 to 10.	From 10 to 15.	From 15 to 20.	From 20 to 30.	From 30 to 40.	From 40 to 50.	From 50 to 60.	From 60 to 70.	From 70 to 80.	From 80 to 90.	From 90 to 100.	From 100 to 110.	From 110 to 120.	TOTALS.
Brought over	705	282	192	96	51	82	343	312	264	150	132	94	36	1	1	0	2741
Gout	0	0	0	0	0	0	0	0	1	1	2	2	0	0	0	0	6
Gangrene	1	1	6	1	1	0	0	0	1	0	0	0	0	0	0	0	11
Gun-shot wound	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	2
Hernia	1	0	0	3	0	0	0	0	0	1	0	0	0	0	0	0	5
Hives	28	11	25	7	0	0	0	0	0	0	0	0	0	0	0	0	71
Hooping cough	29	13	11	4	0	0	0	0	0	0	0	0	0	0	0	0	57
Hæmorrhage	0	0	0	0	0	1	8	3	9	3	1	0	0	0	0	0	23
Insanity	0	0	0	0	0	1	0	8	3	1	1	3	0	0	0	0	17
Inflammation of the Breast	7	1	0	1	0	3	0	1	0	0	1	1	1	0	0	0	13
Lungs	37	8	16	8	3	3	15	17	6	7	2	5	4	1	0	0	130
Stomach	7	2	1	3	0	1	5	3	7	3	3	4	2	0	0	0	36
Brain	6	6	5	3	3	5	12	10	6	3	3	2	1	0	0	0	66
Bowels	24	8	6	3	5	3	7	10	8	7	2	4	2	1	0	0	88
Liver	1	2	5	1	1	2	8	10	4	2	1	1	1	2	0	0	39
Peritoneum	0	0	1	1	0	0	5	3	1	0	2	3	1	2	0	0	19
Kidneys	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2
Bladder	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Heart	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
Knee-joint	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Uterus	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Jaundice	0	1	0	0	0	0	1	2	0	0	1	2	2	0	0	0	11
Locked jaw	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	4
Laudanum to excess	0	0	1	0	0	0	4	1	3	0	0	0	0	0	0	0	9
Measles	12	21	21	3	0	0	1	0	0	0	0	0	0	0	0	0	58
Mortification	2	1	0	2	0	0	0	3	0	1	1	2	0	0	0	0	12
Mania a potu	0	0	0	0	0	0	18	29	24	8	3	0	0	0	0	0	82
Old Age	0	0	0	0	0	0	0	0	0	0	2	14	36	8	1	3	64
Palsy	0	0	0	0	0	0	2	2	6	2	6	8	13	4	0	0	42
Pleurisy	0	0	0	0	0	0	2	2	3	0	0	0	0	0	0	0	5
Phlegmasia dolens	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Rheumatism	0	0	0	0	0	1	0	0	1	1	1	1	1	1	0	0	8
Still-born	321	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	321
Sudden	4	1	1	1	0	0	1	3	12	16	2	10	2	1	1	0	55
Suffocation	1	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	3
Suicide	0	0	0	0	0	0	0	0	1	4	0	1	0	0	0	0	7
Stone	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2
Scrofula	6	1	2	1	1	1	1	0	1	0	0	0	0	0	0	0	14
Small-pox	17	3	18	5	1	7	38	8	5	3	2	0	2	0	1	0	107
Sore throat	3	2	1	1	0	0	0	1	3	3	1	1	0	0	0	0	16
Spina bifida	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	3
Stricture	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Syphilis	3	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	7
Tubercles of the brain	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Tumours	0	0	0	1	0	1	1	2	0	0	5	1	0	0	0	0	11
Teething	1	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Ulcers	1	1	0	2	0	0	1	4	5	3	2	0	0	0	0	0	19
Violence	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	3
Varioloid	5	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Vomiting	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Worms	0	1	1	1	0	0	1	0	0	1	0	0	0	0	0	0	4
Wounds	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0	0	4
Unknown	26	22	1	1	0	1	6	5	4	0	2	0	3	0	0	0	71
	1254	395	329	148	70	113	498	459	372	206	191	150	90	12	2	3	4292

Of the foregoing there were Males of 20 years and upwards, 1166; 1204 under 20 years; 855 Females of 20 years and upwards; and 1067 under 20 years.

There were 356 returns received at the Health Office of persons who died in the Alms-house of the City during the year; and 706 People of Colour are included in the statement of interments.

Deaths in each month of the within period.

	Adults.	Children.	Total.
January	200	161	361
February	143	129	272
March	141	151	292
April	185	133	318
May	123	129	252
June	140	203	343
July	184	385	569
August	168	247	415
September	253	228	481
October	195	195	390
November	139	160	299
December	144	156	300
	2015	2277	4292

Agreeably to returns made to the Health Office, and collected from 157 Practitioners of Midwifery, there have been born in the City and Liberties, from the 1st of January, 1828, to the 31st of December, 1828, 3694 Male, and 3506 Female children; making the total number of births, 7200; leaving a difference between the births and interments of 2908.

By order of the Board of Health,

JOSEPH PRYOR, *Clerk.*

Health Office, Philadelphia, January 1, 1829.

Observations upon the Bill of Mortality for 1828.—This bill shows an increase in the mortality of 1828 over that of the preceding year, amounting to 347, which sum is chiefly made up by the greater number of deaths recorded under the heads of Consumption, Convulsions, Bowel complaints, Dropsies, Inflammations, Measles, and Small-pox. The mortality of children under 10, considerably exceeded the number of deaths which occurred at all other periods of life. The month in which the greatest mortality occurred was July, during which there died 184 adults, and 385 children, in all 569; that which offers the smallest amount of deaths is May, in which month there died 123 adults, and 129 children, in all 252. The other months, arranged according to their respective degrees of mortality, beginning with the highest, would stand in the following order: viz. September, August, October, January, June, April, December, November, March, February.

The number of births registered was 7200, which amount is 3229 greater than that of the mortality.

Mercury detected in Swaim's Panacea.—Extract of a letter from Richard Emmons, M. D. of Great Crossing, Kentucky, to the Editors. "I notice in your August No. that mercury has been detected in Swaim's Panacea. This is no new intelligence to me. A Mrs. B. a neighbour of mine, took several bottles of the panacea for a scrofulous ulcer of the throat. The remedy produced no abatement of the disease. After using up one of the bottles, small globules of quicksilver were seen rolling over the bottom of it.

"It was very warm weather when the quicksilver was discovered precipitated at the bottom of the bottle, hence I have no doubt but that the panacea had experienced at least a partial fermentation. The patient, Mrs. B., was compelled to scald one of her bottles in order to preserve it."

Solution of the White Oxide of Arsenic and Tartar Emetic in Herpes, &c.—Dr. Richard Emmons, of Kentucky, writes to us, that he has used a saturated solution of the white oxide of arsenic, with tartar emetic, half an ounce of the former to ten grains of the latter, with complete success in a few cases of herpes; and he suggests its use in obstinate cutaneous diseases. The remedy should be used with caution. Dr. E. does not inform us how his arsenical solution is made.

Bark of the Root of the Lynn or Wahoo, (Ulmus alata, Mich.) as a Poultice.—Dr. W. F. Luckie, of Clinton, Mississippi, writes to us that he has for some eight or ten years been in the habit of using this application to all the varieties of phlegmonous inflammation, with remarkable success. In cases of erysipelas, burns, bruises, contusions, and wounds of various descriptions, he has used it to the exclusion nearly of all other local applications, with great advantage. The way to prepare the poultice is to take the root of young trees, and after removing the cuticle from the bark, to scrape off the bark, and add a sufficiency of cold water to make it into a soft uniform pulp, which should be spread on cloth at least an inch thick, and sufficiently large to cover the whole of the inflamed part. The poultice should be renewed three or four times a day.

NECROLOGY.

Died, May 18, 1829, at his residence in Dumfries, Va. near the banks of the Potowmac river, John Spence, M. D. aged sixty-three years, one of the Collaborators of the American Journal of the Medical Sciences.

This gentleman, for nearly forty years, enjoyed in the section of Virginia in which he lived, the highest reputation as a judicious and successful practitioner; and has contributed in no small degree to the present scientific state of medicine in this country, by presenting the example of an indefatigable and accomplished student, almost to the close of his existence; and by his original contributions to the pages of medical journals.

Upon the first introduction of the vaccine disease into the United States, his attention was closely bestowed upon it, and in a short time he became satisfied of its really possessing those prophylactic powers, attributed to it by its renowned discoverer. His zeal in the cause, his general intelligence and polish as a scholar, and his established reputation in medicine, inspired the public with such confidence in his judgment, as soon enabled him to extend the benefit of his convictions not only throughout his own region, but to the more distant points of Virginia and of the adjoining states. He was on this momentous occasion, while public opinion yet remained undetermined, a luminary in the path of science; and though he reflected a light derived from a more lustrous source, yet he contributed in no small degree to its extension. The journals and publications of that day, attest sufficiently the spirit of apostleship with which he was inspired by the new doctrine, and his efficiency in the cause. He remained to the time of his death a devoted believer in the same cause, and from repeated and varied experiments, had satisfied himself so fully on the